#2

0500

#2

OIPE

ENTERED

P.6

RAW SEQUENCE LISTING DATE: 03/20/2002
PATENT APPLICATION: **US/10/092,367** TIME: 16:19:35

Input Set : **A:\2314-224-II.ST25.txt**
Output Set: **N:\CRF3\03202002\J092367.raw**

3 <110> APPLICANT: University of Utah Research Foundation
4 Cognetix, Inc.
5 Olivera, Baldomero M
6 McIntosh, J. Michael
7 Garrett, James E.
8 Walker, Craig S.
9 Watkins, Maren
10 Jones, Robert M.
12 <120> TITLE OF INVENTION: Linear Gamma-Carboxyglutamate Rich Conotoxins
14 <130> FILE REFERENCE: 2314-224-II
C--> 16 <140> CURRENT APPLICATION NUMBER: US/10/092,367
C--> 16 <141> CURRENT FILING DATE: 2002-03-07
16 <150> PRIOR APPLICATION NUMBER: US 60/273,639
17 <151> PRIOR FILING DATE: 2001-03-07
19 <160> NUMBER OF SEQ ID NOS: 196
21 <170> SOFTWARE: PatentIn version 3.0
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 24
25 <212> TYPE: PRT
26 <213> ORGANISM: Conus ammiralis
28 <220> FEATURE:
29 <221> NAME/KEY: PEPTIDE
30 <222> LOCATION: (1)..(24)
31 <223> OTHER INFORMATION: Xaa at residue 1 is Gln or pygro-Glu; Xaa at residues 7, 8 and 9
32 is Glu or gamma-carboxy-Glu; Xaa at residues 13 and 16 is Lys, no
33 r-Lys, N-methyl-Lys, N,N-dimethyl-Lys or N,N,N-trimethyl-Lys
36 <400> SEQUENCE: 1
W--> 38 Xaa Gly Gln Asp Asp Ser Xaa Xaa Xaa Asp Ser Gln Xaa Val Met Xaa
39 1 5 10 15
41 His Gly Gln Arg Arg Glu Arg Arg
42 20
44 <210> SEQ ID NO: 2
45 <211> LENGTH: 17
46 <212> TYPE: PRT
47 <213> ORGANISM: Conus betulinus
49 <220> FEATURE:
50 <221> NAME/KEY: PEPTIDE
51 <222> LOCATION: (1)..(17)
52 <223> OTHER INFORMATION: Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
53 aa at residue 17 is Pro or hydroxy-Pro
56 <400> SEQUENCE: 2
W--> 58 Gly Gly Xaa Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Leu Thr

59 1 5 10 15

RAW SEQUENCE LISTING DATE: 03/20/2002
PATENT APPLICATION: US/10/092,367 TIME: 16:19:35

Input Set : A:\2314-224-II.ST25.txt
Output Set: N:\CRF3\03202002\J092367.raw

W--> 61 Xaa
64 <210> SEQ ID NO: 3
65 <211> LENGTH: 17
66 <212> TYPE: PRT
67 <213> ORGANISM: Conus betulinus
69 <220> FEATURE:
70 <221> NAME/KEY: PEPTIDE
71 <222> LOCATION: (1)..(17)
72 <223> OTHER INFORMATION: Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
73 aa at residue 17 is Pro or hydroxy-Pro
76 <400> SEQUENCE: 3
W--> 78 Gly Gly Xaa Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Ile Thr
79 1 5 10 15
W--> 81 Xaa
84 <210> SEQ ID NO: 4
85 <211> LENGTH: 17
86 <212> TYPE: PRT
87 <213> ORGANISM: Conus betulinus
89 <220> FEATURE:
90 <221> NAME/KEY: PEPTIDE
91 <222> LOCATION: (1)..(17)
92 <223> OTHER INFORMATION: Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
93 aa at residue 17 is Pro or hydroxy-Pro
96 <400> SEQUENCE: 4
W--> 98 Asp Gly Xaa Xaa Val Arg Xaa Ala Ala Xaa Thr Leu Asn Xaa Leu Thr
99 1 5 10 15
W--> 101 Xaa
104 <210> SEQ ID NO: 5
105 <211> LENGTH: 18
106 <212> TYPE: PRT
107 <213> ORGANISM: Conus betulinus
109 <220> FEATURE:
110 <221> NAME/KEY: PEPTIDE
111 <222> LOCATION: (1)..(18)
112 <223> OTHER INFORMATION: Xaa at residues 3, 7, 10, 14, 16 and 17 is Glu or gamma-carboxy-G
113 lu
116 <400> SEQUENCE: 5
W--> 118 Gly Tyr Xaa Asp Asp Arg Xaa Ile Ala Xaa Thr Val Arg Xaa Leu Xaa
119 1 5 10 15
W--> 121 Xaa Ala
124 <210> SEQ ID NO: 6
125 <211> LENGTH: 17
126 <212> TYPE: PRT
127 <213> ORGANISM: Conus betulinus
129 <220> FEATURE:
130 <221> NAME/KEY: PEPTIDE
131 <222> LOCATION: (1)..(17)
132 <223> OTHER INFORMATION: Xaa at residues 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; Xaa
133 at residue 17 is Pro or hydroxy-Pro

RAW SEQUENCE LISTING DATE: 03/20/2002
PATENT APPLICATION: **US/10/092,367** TIME: 16:19:35

Input Set : **A:\2314-224-II.ST25.txt**
Output Set: **N:\CRF3\03202002\J092367.raw**

136 <400> SEQUENCE: 6
W--> 138 Gly Gly Gly Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Ile Thr
139 1 5 10 15
W--> 141 Xaa
144 <210> SEQ ID NO: 7
145 <211> LENGTH: 18
146 <212> TYPE: PRT
147 <213> ORGANISM: Conus bullatus
149 <220> FEATURE:
150 <221> NAME/KEY: PEPTIDE
151 <222> LOCATION: (1)..(18)
152 <223> OTHER INFORMATION: Xaa at residue 2 is Pro or hydroxy-Pro; Xaa at residues 3, 7, 10,
153 14, 16 and 17 is Glu or gamma-carboxy-Glu; Xaa at residue 5 is T
154 yr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho
155 -Tyr or nitro-Tyr
158 <400> SEQUENCE: 7
W--> 160 Asn Xaa Xaa Thr Xaa Ile Xaa Ile Val Xaa Ile Ser Arg Xaa Leu Xaa
161 1 5 10 15
W--> 163 Xaa Ile
166 <210> SEQ ID NO: 8
167 <211> LENGTH: 20
168 <212> TYPE: PRT
169 <213> ORGANISM: Conus bullatus
171 <220> FEATURE:
172 <221> NAME/KEY: PEPTIDE
173 <222> LOCATION: (1)..(20)
174 <223> OTHER INFORMATION: Xaa at residue 2 is Pro or hydroxy-Pro; Xaa at residues 3, 6, 9,
175 12, 16, 18 and 19 is Glu or gamma-carboxy-Glu; Xaa at residue 5 i
176 s Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phos
177 pho-Tyr or nitro-Tyr
180 <400> SEQUENCE: 8
W--> 182 Asn Xaa Xaa Thr Xaa Xaa Asn Leu Xaa Leu Val Xaa Ile Ser Arg Xaa
183 1 5 10 15
W--> 185 Leu Xaa Xaa Ile
186 20
188 <210> SEQ ID NO: 9
189 <211> LENGTH: 19
190 <212> TYPE: PRT
191 <213> ORGANISM: Conus catus
193 <220> FEATURE:
194 <221> NAME/KEY: PEPTIDE
195 <222> LOCATION: (1)..(19)
196 <223> OTHER INFORMATION: Xaa at residues 3, 4, 8, 11, 15 and 17 is Glu or gamma-carboxy-Gl
197 u
200 <400> SEQUENCE: 9
W--> 202 Ser Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Leu
203 1 5 10 15
W--> 205 Xaa Arg Asn
208 <210> SEQ ID NO: 10

RAW SEQUENCE LISTING DATE: 03/20/2002
PATENT APPLICATION: US/10/092,367 TIME: 16:19:35

Input Set : A:\2314-224-II.ST25.txt
Output Set: N:\CRF3\03202002\J092367.raw

209 <211> LENGTH: 19
210 <212> TYPE: PRT
211 <213> ORGANISM: Conus catus
213 <220> FEATURE:
214 <221> NAME/KEY: PEPTIDE
215 <222> LOCATION: (1)..(19)
216 <223> OTHER INFORMATION: Xaa at residues 3, 4, 8, 11, 15 and 17 is Glu or gamma-carboxy-Gl
217 u
220 <400> SEQUENCE: 10
W--> 222 Gly Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Leu
223 1 5 10 15
W--> 225 Xaa Arg Asp
228 <210> SEQ ID NO: 11
229 <211> LENGTH: 19
230 <212> TYPE: PRT
231 <213> ORGANISM: Conus catus
233 <220> FEATURE:
234 <221> NAME/KEY: PEPTIDE
235 <222> LOCATION: (1)..(19)
236 <223> OTHER INFORMATION: Xaa at residues 3, 4, 8, 11, 15 and 17 is Glu or gamma-carboxy-Gl
237 u
240 <400> SEQUENCE: 11
W--> 242 Ser Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Pro
243 1 5 10 15
W--> 245 Xaa Arg Asn
248 <210> SEQ ID NO: 12
249 <211> LENGTH: 17
250 <212> TYPE: PRT
251 <213> ORGANISM: Conus catus
253 <220> FEATURE:
254 <221> NAME/KEY: PEPTIDE
255 <222> LOCATION: (1)..(17)
256 <223> OTHER INFORMATION: Xaa at residues 2, 3, 7, 10 and 14 is Glu or gamma-carboxy-Glu
259 <400> SEQUENCE: 12
W--> 261 Ile Xaa Xaa Gly Leu Ile Xaa Asp Leu Xaa Thr Ala Arg Xaa Arg Asp
262 1 5 10 15
264 Ser
267 <210> SEQ ID NO: 13
268 <211> LENGTH: 17
269 <212> TYPE: PRT
270 <213> ORGANISM: Conus catus
272 <220> FEATURE:
273 <221> NAME/KEY: PEPTIDE
274 <222> LOCATION: (1)..(17)
275 <223> OTHER INFORMATION: Xaa at residues 2, 3, 7, 10 and 14 is Glu or gamma-carboxy-Glu
278 <400> SEQUENCE: 13
W--> 280 Ile Xaa Xaa Gly Leu Ile Xaa Asp Leu Xaa Ala Ala Arg Xaa Arg Asp
281 1 5 10 15
283 Ser

RAW SEQUENCE LISTING DATE: 03/20/2002
PATENT APPLICATION: **US/10/092,367** TIME: 16:19:35

Input Set : **A:\2314-224-II.ST25.txt**
Output Set: **N:\CRF3\03202002\J092367.raw**

286 <210> SEQ ID NO: 14
287 <211> LENGTH: 29
288 <212> TYPE: PRT
289 <213> ORGANISM: Conus catus
291 <220> FEATURE:
292 <221> NAME/KEY: PEPTIDE
293 <222> LOCATION: (1)..(29)
294 <223> OTHER INFORMATION: Xaa at residues 2, 4, 10 and 16 is Glu or gamma-carboxy-Glu; Xaa
295 at residues 3. 9, 25 and 28 is Pro or hydroxy-Pro; Xaa at residue
296 26 is Trp (D or L) or halo-Trp (D or L)
299 <220> FEATURE:
300 <221> NAME/KEY: PEPTIDE
301 <222> LOCATION: (1)..(29)
302 <223> OTHER INFORMATION: Xaa at residue 29 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys
303 or N,N,N-trimethyl-Lys
306 <400> SEQUENCE: 14
W--> 308 Gly Xaa Xaa Xaa Val Gly Ser Ile Xaa Xaa Ala Val Arg Gln Gln Xaa
309 1 5 10 15
W--> 311 Cys Ile Arg Asn Asn Asn Asn Arg Xaa Xaa Cys Xaa Xaa
312 20 25
314 <210> SEQ ID NO: 15
315 <211> LENGTH: 17
316 <212> TYPE: PRT
317 <213> ORGANISM: Conus distans
319 <220> FEATURE:
320 <221> NAME/KEY: PEPTIDE
321 <222> LOCATION: (1)..(17)
322 <223> OTHER INFORMATION: Xaa at residues 5, 6, 8 and 12 is Glu or gamma-carboxy-Glu
325 <400> SEQUENCE: 15
W--> 327 Thr Ile Thr Ala Xaa Xaa Ala Xaa Arg Thr Ser Xaa Arg Met Ser Ser
328 1 5 10 15
330 Met
333 <210> SEQ ID NO: 16
334 <211> LENGTH: 19
335 <212> TYPE: PRT
336 <213> ORGANISM: Conus distans
338 <220> FEATURE:
339 <221> NAME/KEY: PEPTIDE
340 <222> LOCATION: (1)..(19)
341 <223> OTHER INFORMATION: Xaa at residue 1 is Gln or pyro-Glu; Xaa at residues 2, 7, 8, 10
342 and 14 is Glu or gamma-carboxy-Glu; Xaa at residues 4 and 6 is Pr
343 o or hydroxy-Pro
346 <400> SEQUENCE: 16
W--> 348 Xaa Xaa Thr Xaa Thr Xaa Xaa Xaa Val Xaa Arg His Thr Xaa Arg Leu
349 1 5 10 15
351 Lys Ser Met
354 <210> SEQ ID NO: 17
355 <211> LENGTH: 15
356 <212> TYPE: PRT

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY DATE: 03/20/2002
PATENT APPLICATION: **US/10/092,367** TIME: 16:19:36

Input Set : **A:\2314-224-II.ST25.txt**
Output Set: **N:\CRF3\03202002\J092367.raw**

L:16 M:270 C: Current Application Number differs, Replaced Current Application No
L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:38 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:58 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:61 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:78 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:81 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:98 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:101 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:118 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:121 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:138 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:160 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:163 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:182 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:185 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:202 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:205 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:222 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:225 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:242 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:245 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:261 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:280 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:308 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:311 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:327 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:348 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:386 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:414 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:417 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:443 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:446 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:467 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:486 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22
L:505 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:508 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:525 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24
L:546 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:549 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:567 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:570 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:595 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:598 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:623 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28
L:626 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28

VERIFICATION SUMMARY DATE: 03/20/2002
PATENT APPLICATION: **US/10/092,367** TIME: 16:19:36

Input Set : **A:\2314-224-II.ST25.txt**
Output Set: **N:\CRF3\03202002\J092367.raw**

L:651 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:654 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:679 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:682 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:744 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:34
L:756 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:35